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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/863,885	05/22/2001	Eric Hauptfear	MTC 6721.1; 39-21(51835)	9345
321	7590	11/09/2004	EXAMINER	
SENNIGER POWERS LEAVITT AND ROEDEL ONE METROPOLITAN SQUARE 16TH FLOOR ST LOUIS, MO 63102			ZUCKER, PAUL A	
			ART UNIT	PAPER NUMBER
			1621	

DATE MAILED: 11/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary**Application No.**

09/863,885

Applicant(s)

HAUPFEAR ET AL.

Examiner

Paul A. Zucker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-64,96-100,218-233,235-325 and 327-404 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,5-43,47-64,96-100,218-233,235-325 and 327-399 is/are allowed.
- 6) ☒ Claim(s) 44- 46 and 400-404 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Current Status

1. This action is responsive to Applicants' amendment of 26 February 2004.
2. Receipt and entry of Applicants' amendment is acknowledged.
3. Applicant's addition of new claims 440-404 is acknowledged.
4. Claims 1, 2, 5-64, 96-100, 218-233, 235-325, and 327-404 are pending.
5. The rejection under 35 USC § 103 (a) set forth in paragraph 10 of the previous Office Action mailed 26 August 2004 is withdrawn in response to Applicant's amendment.

New Rejections

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Franz (US 3,950,402 04-1976).

Instantly claimed is a process for making an N-(phosphonomethyl)glycine product which comprises:

- a. Oxidizing N-(phosphonomethyl) iminodiacetic acid in the presence of a catalyst;
- b. Precipitating the N-(phosphonomethyl)glycine product to produce N-(phosphonomethyl)glycine crystals;
- c. Separating the mother liquor; and
- d. Evaporating the mother liquor to produce N-(phosphonomethyl)glycine crystals and a second mother liquor.

Franz teaches (Column 5, lines 32-58) a process for the oxidation of N-(phosphonomethyl) iminodiacetic acid to produce N-(phosphonomethyl)glycine with hydrogen peroxide in the presence of sulfuric acid as catalyst. Franz also teaches (Column 4, line 58- column 6, line 40) the use of platinum, palladium and rhodium catalysts for the oxidation reaction in the presence of oxygen gas. Franz teaches (Column 3, lines 47-53) the precipitation by cooling and recovery by filtration of N-(phosphonomethyl)glycine crystals to produce a primary mother liquor. Franz further teaches (Column 3, lines 55-55) the production of additional crystals from the mother liquor upon continued cooling to produce a secondary mother liquor.

The difference between the process taught by Franz and that instantly claimed is that the secondary mother liquor is produced in the process of Franz by continued cooling. In the instant case, however, the secondary mother liquor is produced by evaporation of the primary mother liquor.

Franz, however, further teaches (Column 6, lines 57-61 and column 5, lines 59-61) reduction of the volume of the reaction product mixture by evaporation under reduced pressure and crystallization to produce N-(phosphonomethyl)glycine crystals. Franz teaches that temperatures of 78°C-17.5°C are obtained which overlaps with the instantly claimed range.

One of ordinary skill in the art would have been motivated to replace the second cooling step with the evaporation of solvent as taught by Franz since the evaporative process would allow more complete recovery of the N-(phosphonomethyl)glycine crystals and would have been less expensive (in terms of time and electricity) than continued cooling of the primary mother liquor.

Thus the instantly claimed process would have been obvious to one of ordinary skill in the art. There would have been a reasonable expectation of success since Franz teaches the suitability of the evaporative process for the production of N-(phosphonomethyl)glycine crystals.

Examiner's Response to Applicants Arguments with Regard to This Rejection

7. Applicants have presented several arguments with regard to this rejection. The Examiner responds to theses below:

- a. Applicants argue (Remarks, page 65, lines 8-9) that nothing in the disclosure of Franz suggests a combination of cooling and evaporation crystallization steps such as that instantly claimed. The Examiner responds, however, that Franz teaches a two-stage crystallization process as pointed out in the

rejection above. Franz further suggests (Column 1, lines 28-31), as pointed out by Applicants, that cooling and evaporation may be used interchangeably. Franz's exemplification of a two-stage crystallization process in which only cooling steps are employed does not obviate his suggestion that one or both of the cooling steps may be replaced with an evaporation step.

- b. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicant's arguments filed 26 August 2004 have been fully considered but they are not persuasive for the reasons indicated above.

8. Claims 400-404 are finally rejected under 35 U.S.C. 103(a) as being unpatentable over Franz (US 3,950,402 04-1976) as applied to claims 44-46, above and further in view of Parker et al (US 5,543,383 08-1996).

Instantly claimed is a process for making an N-(phosphonomethyl)glycine product which comprises:

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- a. Oxidizing N-(phosphonomethyl) iminodiacetic acid in the presence of a catalyst;
- b. Precipitating the N-(phosphonomethyl)glycine product to produce N-(phosphonomethyl)glycine crystals;
- c. Separating the mother liquor; and
- d. Evaporating the mother liquor to produce N-(phosphonomethyl)glycine crystals and a second mother liquor.
- e. Converting the N-(phosphonomethyl)glycine product to an alkali metal or amine salt.

The difference between the process of Franz and that instantly claimed is that Franz does not contemplate the conversion of the product N-(phosphonomethyl)glycine to its alkali metal or amine salt.

Parker, however, teaches (Column 4, line 63-column 5, line 10) the conversion of the glyphosate acid to the corresponding herbicidally active salt form. Parker teaches alkali metal and amine salts such as the monoisopropylamine salt of N-phosphonomethylglycine and the monopotassium salt of N-phosphonomethylglycine. Parker uses the salts produced in herbicidal compositions.

One of ordinary skill in the art would therefore have been motivated to convert the glyphosate acid produced by the process of Franz to the corresponding herbicidally active salt form by Parker in order to employ it in the compositions that Parker

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teaches. Since N-(phosphonomethyl)glycine would be expected to behave the same regardless of the process used to produce it there would have been a reasonable expectation for success.

Thus the instantly claimed process would have been obvious to one of ordinary skill in the art.

Allowable Subject Matter

9. Claims 231-233 are allowed. The following is a statement of reasons for the indication of allowable subject matter: The closest prior art Pelyva et al (UK 2,224,505 A 05-1990) neither discloses nor fairly suggests purging a portion of the secondary fraction for the removal of by-products and impurities. Claims 231-233 are therefore patentable over the teachings of Pelyva.

Conclusion

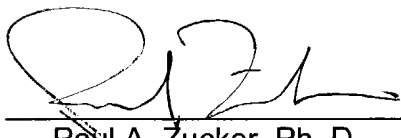
10. Claims 1, 2, 5-64, 96-100, 218-233, 235-325, and 327-404 are pending. Claims 231-233 and 400-404 are rejected. Claims 1, 2, 5-43, 47-64, 96-100, 218-233, 235-325, and 327-399 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Zucker whose telephone number is 571-272-0650. The examiner can normally be reached on Monday-Friday 7:00-3:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann R. Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Paul A. Zucker', is written over a horizontal line.

Paul A. Zucker, Ph. D.
Patent Examiner
Technology Center 1600